

- Hotea picea*, Walk. *loc. cit.* p. 56. n. 4, = *Deroplax circumducta*, Germ.
 — *nasuta*, Walk. *loc. cit.* p. 58. n. 9, = *H. curculionoides*, H.-S.
Euryaster incomptus, Walk. *loc. cit.* p. 67. n. 10, = *Bolbocoris reticulatus*, Dall.
Podops conspersus, Walk. *loc. cit.* p. 71. n. 9. Not belonging to either of the subfamilies here treated.
 — *asper*, Walk. *loc. cit.* p. 72. n. 10. Condition too bad for identification.
 — *spinosus*, Walk. *loc. cit.* p. 73. n. 18, = *P. coarctata*, Fabr.
 — *nasalis*, Walk. *loc. cit.* p. 73. n. 19, = *P. coarctata*, Fabr.
 — *exactus*, Walk. *loc. cit.* p. 74. n. 24, = *P. coarctata*, Fabr.
 — *funestus*, Walk. *loc. cit.* iii. p. 521 (1868), = *P. spinifera*, Westw.
Teressa terranea, Walk. *loc. cit.* i. p. 113. n. 1 (1867), = *Brachycerochoris camelus*, Costa.

To be treated as non-existent.

Species the types of which are not now to be found in the British Museum.

- Pæcilocoris plenisignatus*, Walk. Cat. Het. i. p. 9. n. 13 (1867).
Tectocoris amboinensis, Walk. *loc. cit.* p. 14. n. 5.
Scutellera humeralis, Walk. *loc. cit.* p. 17. n. 10.
Hotea circumcincta, Walk. *loc. cit.* p. 57. n. 8.
Podops terricolor, Walk. *loc. cit.* p. 71. n. 8.

Species the types of which are supposed to be in Australia.

- Bolbocoris mimicus*, Walk. Cat. Het. i. p. 63. n. 6 (1867). National Museum, Melbourne.
 — *subpunctatus*, Walk. *loc. cit.* p. 63. n. 7. National Museum, Melbourne.
Podops teter, Walk. *loc. cit.* p. 74. n. 23. National Museum, Melbourne.
Sphærocoris subnotatus, Walk. *loc. cit.* iii. p. 505 (1868). National Museum, Melbourne.

III.—*Description of a new Genus and some new Species of Fossorial Hymenoptera from the Oriental Zoological Region.*
 By P. CAMERON.

Sapygidæ.

This family may now be added to the fauna of the Oriental zoological region. It is of small extent. The few species known hitherto are from Europe and North America.

Polochrum flavicolle, sp. n.

Nigrum, flavo-maculatum; pedibus nigris, femoribus supra flavo-maculatis; alis fere hyalinis, apice fumatis.
 Long. 12 mm. ♀.

Antennæ black, the scape and second joint yellow beneath;

the scape covered with long white hair; the flagellum almost bare. Head black, strongly and deeply rugosely punctured and rather thickly covered with white hair; the eye-incision and the lower orbits, a small line on the inner orbits above, the sides of the clypeus, a mark above it triangularly narrowed on the top, and an interrupted line on the middle of the front, fulvous yellow. Pro- and mesothorax rugosely punctured, the median segment more closely and finely punctured; the base of the pronotum, a large oval inner and a smaller outer mark on the sides of the scutellum, a larger more elongate mark opposite the tegulæ, a narrow line on the sides of the postscutellum, and a mark on the mesopleuræ under the fore wings, fulvous yellow. Legs black, thickly covered with white hair; the apex of the fore femora, the apical part of the middle and the greater part of the hinder femora yellow above. Wings hyaline; the radial and the upper part of the cubital cellules to a less extent smoky; the stigma and nervures are black; the first transverse cubital nervure is curved, the others are straight, oblique; the first recurrent is received in the middle, the second in the basal fourth of the cellule. Abdomen shining, smooth; the base of the third and fourth segments and the greater part of the last three segments above lemon-yellow. The pygidium is keeled down the middle, as is also the basal half of the last ventral segment; the basal three ventral segments are incised in the middle, the basal not so distinctly as the other two; in the middle of the second segment is an oval yellow mark; the third has the sides yellow at the base.

I place this species in *Polochrum* rather than in *Sapyga* because the third cubital cellule is not narrowed at the top and because the antennæ are not so distinctly clavate. In the species here described the antennæ are scarcely so long as the thorax and the flagellum is not distinctly narrowed at the base.

Khasia Hills.

Sphegidæ.

Sceliphron tibiale, sp. n.

Long. 19–20 mm.

In Bingham's table (Faun. Brit. Ind., Hym. p. 236) this species comes into "A. Colours black and yellow," "*a*. Mesonotum striate," and "*b*². Comparatively small (16–18 mm.)," which will be now divided:—

Legs yellow, the apical half of the femora and tibiæ	
black	<i>madrasputanum.</i>
Legs rufous, the hinder femora above and the hinder	
tibiæ entirely black	<i>tibiale.</i>

Head black, the greater part of the clypeus yellow; the apex of the clypeus and the mandibles ferruginous; the front, vertex, and occiput thickly covered with long pale fulvous hair; the cheeks with golden pubescence; the clypeus sparsely with long fuscous hair. The clypeus at the apex roundly bilobate, bare; the mandibles black at the base and apex; the palpi rufo-testaceous, black at the base. The scape of the antennæ rufous; the flagellum black, the apex of the third joint and the fourth on the underside rufous. Thorax black; a line on the pronotum above, a large transverse mark (rounded and narrowed at the ends), two oblique marks (broad at the base, narrowed towards the apex) on the end of the basal lobe of the median segment, the apex of the segment broadly, the tegulæ, tubercles, a mark under them (narrow and oblique at the top, larger and more triangular below), and a triangular mark under the hind wings yellow. The pronotum is depressed in the middle above; the mesonotum is closely transversely striated, covered with long fuscous hair; the scutellum closely longitudinally striated, most strongly on the sides. Median segment thickly covered with long fuscous hair; the basal part distinctly raised and separated from the apical, broadly furrowed down the middle of the basal part; the apical deeply triangularly depressed at the apex. Propleuræ smooth, deeply excavated in the middle behind; the mesopleuræ and metapleuræ closely and slightly obliquely striated, the latter more strongly towards the apex. Wings fulvo-hyaline, distinctly smoky at the apex; the costa and stigma testaceous, the nervures paler. All the coxæ and trochanters are black; the rest of the legs rufous; the femora broadly black at the base above; the tibiæ black above; the posterior femora black above, the tibiæ entirely black; the basal two joints of the tarsi black at the apex, the other joints entirely black; the calcaria with a thick brush on the basal half. Petiole black, shorter than the rest of the abdomen; the apex of the second segment broadly, of the others more narrowly yellow; the apical almost entirely rufous, smooth above, the sides coarsely punctured.

A distinct species.

Khasia Hills.

CÆNOPSEN, gen. nov.

♀. Comes nearest to *Psen*, with which it agrees in the neururation of the wings and in the form of the abdomen, but may be readily known from that genus by the second joint of the antennæ (pedicle) being not small, but as long as the third joint; the antennæ themselves are longer, more slender, and not dilated towards the apex, resembling more those of a male than of a female.

Antennæ distinctly longer than the head and thorax united; all the joints elongate; the scape as long as the second joint, slightly curved. Eyes large, reaching near to the base of the mandibles, parallel on the lower half; the ocelli . . . Clypeus roundly convex, its apex transverse and depressed in the middle. Labrum small, rounded. Mandibles? Parapsidal furrows obsolete. Base of median segment depressed, the depression clearly defined, striated, the rest of the segment irregularly reticulated. Tarsi pilose, without spines, the base of the anterior roundly incised; the anterior spur curved, bifid at the apex; the outer spur of the posterior curved, dilated at the base, the inner spur shorter and narrower. Anterior wings with three transverse cubital nervures; the first recurrent nervure is received in the basal fourth of the cellule, the second is interstitial. In the hind wings the transverse anal nervure is received beyond the cubital. Abdomen with a long curved petiole, which is as long as its dilated apex and the second segment united; the apical ventral segments are fringed with stiff hairs, and more particularly the fourth. Pygidial area smooth, keeled laterally.

The head behind the eyes is obliquely narrowed and is there nearly as long as the eyes; the occiput is sharply margined. The antennæ are placed opposite the middle of the eyes; between them is a short distinct keel, narrowed at the top and bottom; the coxæ and trochanters of moderate size; the mesosternum furrowed down the apex; the tubercles are large and are placed distinctly in front of the tegulæ; the eyes have a narrowed but distinct furrow surrounding them; the episternal furrow on the mesopleuræ is distinct, wide, and deep; the pronotum is clearly separated from the mesonotum; the scutellum and postscutellum large, not much raised.

Cænopsen fuscinervis, sp. n.

Niger; capite thoraceque dense pilosis; alis hyalinis, stigmatæ nervisque fuscis. ♀.

Long. 10 mm.

Antennæ stout, twice the length of the thorax, the apical

joints slightly dilated on the lower side, the second joint as long as the third; the scape sparsely covered with white hair; the flagellum bare. Head shining; the face, clypeus, and labrum thickly covered with silvery hair; the front and vertex strongly and closely punctured except near the eyes, and thickly covered with long fuscous hair. Mesonotum strongly and closely punctured; the parapsidal furrows only indicated at the base. The scutellum is not so strongly punctured as the mesonotum; on the outer side of the post-scutellum is a distinct slightly convex keel. In the centre of the basal area of the median segment are two stout straight keels; the rest of it with stout oblique keels; the apex of the segment is almost perpendicular and is furrowed down the middle; in the middle, on either side, are three stout oblique keels, ending at the edge in three small areæ. Pro- and mesopleuræ smooth; the tubercles fringed behind by white pubescence; on the base of the mesopleuræ is a wide deep furrow which is bent in the middle; the longitudinal furrow is narrow: the base of the metapleuræ is depressed; on the lower side is a narrow oblique furrow; the apex is irregularly stoutly reticulated; in front of this part are some longitudinal keels. Mesosternum shining, smooth, the central furrow shallow, wide, at the base closely transversely striated. Legs black, covered with longish white hair; the calcaria fulvous. The stigma and nervures are fuscous, the former with a more rufous tint; the first cubital cellule is about one half the length of the third; the first recurrent nervure is received in the basal fourth of the cellule, the second is interstitial. Abdomen smooth and shining; the narrowed part of the petiole longer than its dilated apex and the second segment united, smooth, its sides covered with long white hair; the second ventral segment has a deep furrow at the base, this furrow occupying the entire base, and at the sides is covered with white hair; the apices of the third and fourth ventral segments are fringed with longish hair.

Khasia Hills.

Dolichurus reticulatus, sp. n.

Niger, longe albo-hirsutus; alis hyalinis, stigmatibus fusco. ♂.
Long. 8 mm.

Antennæ as long as the body, black, the apical joints distinctly narrowed and more or less brownish; the scape covered with black hair; the flagellum bare. Head black except for the apex of the antennal tubercle, which is yellowish white; the vertex is smooth and impunctate; the

front reticulated distinctly and more closely from the middle of the ocellar region; the face and clypeus thickly covered with long white hair and keeled in the middle. Mandibles smooth, testaceous near the apex; the palpi pilose, dark fuscous. Thorax black, thickly covered with long white hair; on either side of the pronotum above is a white tubercle-like mark. Median segment reticulated, the centre with two longish slightly oblique keels, bounded at the apex by a transverse one; the apex of the segment is oblique. Post-scutellum stoutly longitudinally striated. Pro- and mesopleuræ smooth; the metapleuræ obliquely striated. Wings hyaline, iridescent; the nervures are paler than the costa or stigma; the first transverse cubital nervure is obliquely curved above and has, at the angle thus formed, a distinct branch at the base. Abdomen shining, closely but not strongly punctured; the third segment is depressed at the apex and closely transversely striated; the ventral segments are closely punctured, the apex of the third is depressed and striated at the sides.

D. bipunctatus, Bingham, from Burma, comes near to this species, but may be known from it by the head in front being densely punctured, not reticulated. The sides of the mesonotum at the base are raised near to the tegulæ, which are edged with white at the base; the antennal lamina is triangularly depressed in the middle, its apex not quite transverse; the furrow on the centre of the mesosternum is distinct, the lateral one is narrower and indistinct towards the apex. This makes the fourth species of *Dolichurus* known from India.

Khasia Hills.

Ampulex (Rhínopsis) nigricans, sp. n.

Niger, abdominis apice rufo; alis hyalinis, apice fumato. ♀.
Long. 8 mm.

Comes into Bingham's section "B. a¹. Petiole linear at base, nodose at apex," which is now divided:—

Thorax and legs entirely black. *nigricans*.

Thorax for the greater part rufous, as are also the legs. . *constanceæ*.

Thorax and legs entirely black. Antennæ almost bare, perceptibly thickened towards the apex, the third joint more than twice the length of the fourth. Head opaque, sparsely covered with short white pubescence; the vertex coarsely aciculated; the front obscurely reticulated, indistinctly furrowed down the middle. Clypeus aciculated, shining at the

base, convex, the sides with an oblique slope; the apex in the middle ending in a stout triangular tooth. Eyes almost parallel, hardly converging at the top, where they are separated by slightly less than the length of the third antennal joint. Mesonotum aciculated; the furrows deep, moderately wide, and stoutly and closely crenulated throughout; there is another crenulated furrow along the sides. The three central keels on the metanotum reach near to the apex and end in a reticulated space; the central keel is straight; the outer curved, converging towards the apex; the space enclosed by them is transversely striated, the striae being distinctly separated; the sides are more closely striated; the lateral apical tooth is large, smooth, rounded, and slightly narrowed on the top; the apex of the segment has an almost perpendicular slope and is thickly covered with short white pubescence, the upper half rough, the lower finely transversely striated and furrowed down the middle. The propleuræ aciculated; near the bottom is a narrow furrow, above the middle is a wider, deeper, crenulated furrow, which does not extend quite to the end. The mesopleuræ opaque, hollowed above behind the tubercles, the middle with a broad belt of large deep irregular punctures; the lower edge is bordered by a distinct crenulated furrow. The upper half of the metapleuræ largely reticulated, the lower smooth. Wings hyaline; there is a broad smoky band occupying the whole of the radial, of the second cubital, the apex of the first cubital, and extending on to the apex of the second discoidal; the appendicular cellule is distinct, elongate, open at the apex; the first cubital cellule is, on the lower side, longer than the other two united; the first recurrent nervure is received in the middle, the second in the basal third of the cellule. Legs black; the penultimate joint of the fore tarsi is more dilated than the others; the base of the metatarsus is slightly incised; the claws bifid, the basal claw the smaller. Abdomen with the petiole as long as the dilated part of the segment, narrow, closely longitudinally striated.

Khasia Hills.

Mutillidæ.

The species here described have been taken chiefly at Barrackpore, Bengal, by Mr. G. A. J. Rothney. It is unfortunate that the male Mutillidæ should have to be described without reference to the females; but in our present state of knowledge there is no other course open to us. I am, how-

ever, glad to be able to fix beyond doubt the male of *M. sex-maculata*, one of the best-known of the Indian species.

I may take this opportunity of pointing out that Col. C. T. Bingham has omitted from his 'Fauna of British India, Hymenoptera,' *Mutilla indefensa*, Cam., described by me ('Memoirs Lit. & Phil. Soc. Manch.' xli. p. 63) from Bombay.

i. *Clypeus bidentate*.

Mutilla bidens, sp. n.

Nigra, abdominis segmentis 1° et 2° rufis; clypeo emarginato; alis fusco-violaceis, basi fere hyalinis. ♂.
Long. 9-10 mm.

Scape of antennæ shining, sparsely punctured, above with a few white hairs; the flagellum stout, distinctly tapering towards the apex; opaque, covered with a pale down; the third and fourth joints equal in length. Vertex shining, behind the ocelli coarsely and closely punctured, at their sides much more sparsely punctured; the ocellar region distinctly raised, strongly punctured all over; the ocelli are placed at the sides of the raised part. Clypeus raised gradually from the base to the apex, the sides also raised; the apex is deeply and roundly incised in the middle, the sides at the apex appearing as stout, large, bluntly triangular teeth; the apex on the lower side truncated. Mandibles with only one long apical tooth; the tooth on the lower side behind the middle is large, the base is punctured and covered with long white hair. Pronotum coarsely punctured, its hinder edge distinctly raised; the pleuræ have some stout, irregular, oblique keels; in front of the tegulæ is a large patch of dense silvery pubescence; the remainder is sparsely covered with long pale hair. Scutellum not much raised, shining, the sides bearing large, deep, widely separated punctures and long black hairs; the middle is smooth and shining; there is a furrow down the base in the middle and a longer one, slightly narrowed in the middle, on the apical part. The basal half of the median segment has a thick covering of white pubescence which completely hides the texture; the apex has an oblique slope, is reticulated and covered rather thickly with long fuscous hairs. Mesopleuræ coarsely punctured in the middle, thickly covered with longish white hair; the apical half of the metapleuræ reticulated. Legs thickly covered with white hair; the calcaria white. Wings fuscous, with a slight violaceous tinge, paler, more hyaline at the base, the nervures dark

fuscous, the radial cellule short and wide; the basal abscissa of the radius is sharply and distinctly angled above the middle; the apical is straight above, oblique below; the second and third cubital cellules are equal in length above; the first recurrent nervure is received shortly beyond, the second almost in the middle of, the cellule; the radial and cubital cellules are lighter in tint than the apex of the wings. Abdomen black; the second, third, and the base of the fourth segments ferruginous; the petiole is coarsely punctured, its apex and the apices of the second and third segments are fringed with golden pubescence; the other segments are fringed with white; the pygidium is covered with long black hair; the ventral keel is curved, its apex projecting into a large somewhat triangular tooth; on the sides of the hypopygidium is a large, stout, slightly curved keel, which becomes gradually larger towards the apex as seen from the sides.

This species forms the type of a new group, which may be defined as follows:—

Clypeus largely projecting, becoming broader from the base to the apex and hollowed in the middle; the apex ends in two large somewhat triangular teeth. Mandibles longish, the apex ending in one long tooth; the lower tooth is large. Ocellar region raised. Eye-incision rounded at the base. Pronotum raised behind. Mesonotum without longitudinal furrows. Scutellum furrowed down the middle. Radial cellule short, wide; there are three cubital cellules. Basal segment of the abdomen subsessile; the last ventral segment provided on either side with a stout keel, which becomes gradually wider towards the apex. On the inner side of the hinder coxæ at the apex is a stout shining tooth, rounded at the apex.

The occiput is not sharply margined; the pronotum is raised behind; the parapsidal furrows distinct; on the lower side of the second abdominal segment is a longitudinal keel, covered with a short pile; below this is a smooth, glabrous, broader keel.

ii. *Clypeus not bidentate.*

a. *Scutellum distinctly conical.*

Mutilla cona, sp. n.

Nigra, abdomine rufo, basi apiceque nigris; capite thoraceque dense argenteo-pilosis; scutello rugose punctato; alis fusco-violaceis. ♂. Long. 17 mm.

Scape covered with longish hair, grooved beneath; the

third and fourth joints are nearly equal in length. Head below the ocelli thickly covered with longish white pubescence, the vertex more sparsely with shorter pubescence intermixed with long fuscous hair. Clypeus smooth and shining, depressed, the sides slightly, the apex more distinctly raised; the front and vertex strongly punctured, smooth at the sides of the ocelli, which are distinctly raised. Mandibles at the base thickly covered with white intermixed with fulvous hair; the palpi black. Pronotum strongly punctured, thickly covered with silvery pubescence; the sides of the pleuræ with stout widely separated keels. Mesonotum deeply rugosely punctured, the punctures running into reticulations and much larger and deeper towards the apex; the hair is long and black. Scutellum strongly rugosely punctured except in the middle on the extreme apex above, this portion having a shallow furrow in the middle; the hair on the base is black, on the apex longer and paler; the postscutellum is smooth in the middle, the sides punctured. The base of the median segment is thickly covered with depressed silvery pubescence, which completely hides the texture; the apex is closely reticulated and covered with long fuscous hair. The middle of the mesopleuræ is sparsely and shallowly punctured and thickly covered with white pubescence; the metapleuræ reticulated except at the base above and in the middle. Mesosternum rugosely punctured except in the middle. Legs thickly covered with long white hairs, the spurs pale. Wings fuscous violaceous; the basal abscissa of the radius is straight, oblique; the apical is roundly curved above the middle; the first transverse cubital nervure is oblique, with only a slight curve. Basal segment of the abdomen black except at the apex, and is covered with long white hair; the ventral keel at the apex projects into a short somewhat triangular tooth; the second to sixth segments are covered with fulvous hair; the last segment is entirely black and thickly covered with long black hairs; the middle is smooth and shining; the last ventral segment has on either side a distinct smooth conical tooth, followed by a much larger one, which is curved above and obliquely narrowed on the lower side.

This species agrees in form, pubescence, and coloration with the male of *M. sexmaculata*, Swed., but is quite distinct. The two species may be separated as follows:—

Scutellum in the middle above broadly smooth and shining throughout; the median segment not thickly covered with white pubescence; the sides of the apical two ventral segments marked with stout oblique keels *sexmaculata*.

Scutellum rugose above, the extreme apex only smooth ;
 the median segment thickly covered with white
 pubescence, which hides the sculpture ; the sides
 of the apical two ventral segments armed with
 stout teeth *cona*.

M. cona may further be known from *sexmaculata* by the wings not being so deeply violaceous and by having hyaline streaks in the cubital cellules, by the scutellum not being so distinctly pyramidal, by the metathorax not being so distinctly narrowed at the base, by the smaller ventral keel, and by the more strongly punctured mesosternum.

Various species have been regarded as the male of *M. sexmaculata*, but there has always been some doubt under what name, if any, the male has been described. I am now able to put the matter at rest, Mr. G. A. J. Rothney having taken *sexmaculata* ♀ *in cop.* with its male. I am not sure if this male has been described by anyone ; but it comes nearest to the description of *dimidiata*, Lep. sec. Bingham. The true male is from 20–24 millim. long, is black, with the abdomen red, black at base and apex, the head and thorax deeply covered with white pubescence, and the wings deeply violaceous. Its characteristic points are the pyramidal scutellum, which is broadly smooth and shining above ; the ventral keel, projecting shortly beyond the middle into a stout somewhat triangular tooth ; the apical two ventral segments are marked on either side with a stout somewhat oblique keel ; the upper part of the apical ventral segment at the sides is smooth and shining ; below this, and above the keel, it is closely punctured ; the upper part of the mesopleuræ is tuberculate, as is also the lower, but to a less extent.

Mutilla selma, sp. n.

Nigra, apice petioli segmentisque 2°–5° rufis ; alis violaceis. ♂.
 Long. 12–13 mm.

Scape of antennæ sparsely covered with long white hairs. Front rugose ; the vertex sparsely covered with strong punctures ; clypeus smooth, shining, glabrous, the middle indistinctly keeled. Mandibles shining, broadly rufous before the apex, smooth, sparsely covered with long white and fulvous hair ; the tooth on the lower side at the base is large, longer than broad, rounded at the apex. Pronotum rugosely punctured, the base and middle to near the apex smooth and shining. Mesonotum shining, deeply punctured, the punctures large, deeper and more widely separated towards the apex, sparsely covered with black hair ; the furrows are

moderately wide and deep and reach to the apex; between them at the base in the middle is an elongated smooth spot. Scutellum pyramidal, rugosely punctured, the middle smooth and shining, produced at the apex into a rounded point; at the base is a slight triangular depression. The median segment has a rounded slope, is reticulated, and covered with long pale fulvous hair; the central area is elongated, slightly widened at the base, the sides there oblique. Propleuræ stoutly obliquely striated except at the apex. Mesopleuræ coarsely punctured and sparsely covered with long fulvous hair in the middle, the apical half of the metapleuræ strongly reticulated. Legs thickly covered with pale hairs; the tarsal spines rufous, the calcaria pale. Wings uniformly violaceous; the second cubital cellule at the top is nearly one fourth longer than the third. Abdomen rufous; the petiole, except at the apex, and the apical two segments black; the hair on the basal segment is pale, on the middle pale fulvous, on the apical black intermixed with pale; the apex of the pygidium is depressed and sparsely punctured; the middle in front of this depression is slightly raised and smooth. The keel on the basal ventral segment is stout, dilated broadly at the base; the hypopygium is dilated in the middle, the dilatation becoming gradually larger towards the base.

Mussooree, N.W. Himalayas.

Mutilla fortinata, sp. n.

Nigra, dense albo-pilosa, abdominis segmentis 1°, 2°, et 3° ferrugineis; alis fusco-violaceis, basi fere hyalinis. ♂.
Long. 12-13 mm.

Scape of antennæ thickly covered with white hairs; the third and fourth joints are almost equal in length, the apical joints are slightly roundly dilated above. Front and vertex strongly punctured, covered with long pale hairs, the front also thickly covered with silvery pubescence; the antennal keels are stout, projecting and curved. Clypeus smooth, shining, glabrous, broadly distinctly keeled in the middle, the sides from the keel oblique; the apex is transverse, the sides oblique, so that the inner side appears depressed. The base of the mandibles thickly covered with long white hairs, the apex on the lower side more sparsely with long golden hair; the basal tooth is stout, blunt. Pronotum strongly rugosely punctured, smooth and shining at the base; the upper part of the propleuræ strongly rugose, the middle with stout keels, the lower part smooth. Mesonotum punctured, shining, thickly covered with long black hair; the furrows

are deep ; opposite the tegulæ is a smooth irregular longish line ; the median segment closely reticulated, thickly covered with silky pubescence ; the central area is dilated at the base, its sides oblique. Scutellum pyramidal, coarsely rugosely punctured, the centre raised, smooth, shining, the base covered with long black, the apex with longer fuscous, hair. Postscutellum smooth, bordered laterally with stout keels. Mesopleuræ punctured in the middle and covered thickly with silvery pubescence ; on the lower side of the base is a club-shaped keel. Metapleuræ reticulated, smooth at the base. Wings fuscous violaceous, paler at the base ; the second cubital cellule is longer above and below than the third, the second and third transverse cubital nervures are sharply angled above the middle ; the recurrent nervures near the base of the apical third of the cellules. Legs thickly covered with long white hair. Petiole strongly punctured ; the basal teeth stout, the sides immediately in front of them project ; the ventral keel is roundly and uniformly incised in the middle. The pygidial area is smooth in the middle at the base, the apex is depressed and obscure rufous in the middle ; the hypopygium is stoutly obliquely keeled laterally ; the penultimate segment is keeled. The pubescence on the basal segments is white, on the middle long and golden, on the apical black.

b. *Scutellum not distinctly conical ; the fore wings more or less hyaline at the base.*

Mutilla lena, sp. n.

Nigra, abdomine ferrugineo, apice basique petioli late nigris ; alis fusco-violaceis, basi hyalinis. ♂.

Long. 10 mm.

Antennæ longish, the scape above covered with longish white hair, below much more thickly with short pale pubescence ; the flagellum almost glabrous, the third and fourth joints equal in length. Front and vertex shining, rather strongly punctured, the vertex sparsely covered with fuscous hair ; the front with a broad band of silvery pubescence. Clypeus shining, its apex roundly projecting, the inner side shallowly but distinctly depressed, and finely transversely striated at the apex. Mandibles finely punctured at the base and sparsely covered with long silvery hair ; the tooth on the lower side large, longer than broad, conical. Pro- and mesonotum shining, strongly punctured ; the pronotum thickly covered with long fuscous, the mesonotum more

sparsely with shorter black, hair; the two furrows are deep and wide. Scutellum scarcely raised above the level of the mesonotum, strongly punctured, the middle on the basal part smooth and shining, the smooth part slightly depressed in the middle at the base; the postscutellum finely rugose. Median segment reticulated, the apex more closely below, its upper part more irregularly and with a keel down the middle; the reticulations on the basal half are large and irregular; the central area is wide, slightly widened at the base, and it reaches to the apex. There is a large, stout, curved keel near the base of the propleuræ; in the middle are three oblique ones; mesopleuræ rugosely punctured except behind, in the middle thickly covered with white pubescence; the apex of metapleuræ reticulated. Mesosternum smooth and shining. Legs black; the hair, calcaria, and spines white. Wings dark fuscous violaceous; the nervures black; the second cubital cellule at the top is slightly longer than the third; the first recurrent nervure is received shortly beyond the middle; the upper part of the radius is only at a slightly different angle from the lower. Abdomen ferruginous; the base of the petiole and the apical segment black; the penultimate segment piceous black; the petiole is strongly but not closely punctured; the ventral keel is slightly roundly curved and a little dilated towards the apex; the pygidium is closely punctured, smooth in the middle; the hypopygium has a stout oblique keel on the sides, which projects into a triangular tooth at the apex.

Mutilla fianna, sp. n.

Nigra, abdominis medio late ferrugineo; medio scutello lævi; alis fusco-violaceis, basi hyalinis. ♂.

Long. 13–14 mm.

Front and vertex strongly punctured, the middle of the front thickly covered with silvery pubescence, the vertex sparsely with long fuscous hair. Clypeus smooth, the apex slightly and finely transversely striated, transverse, the sides oblique. Mandibles at the base thickly covered with long pale fulvous hair; the apical joints of the palpi dull testaceous. Pronotum strongly punctured; the upper third of the propleuræ slightly hollowed, smooth, the rest bearing six or seven stout keels. Mesonotum shining, strongly punctured, sparsely covered with stiff black hairs; the two furrows are wide and deep; in its centre in front is a smooth shining line. Scutellum scarcely raised above the mesonotum, its apex has an

oblique slope; in the middle is a flat, smooth, shining, broad space, which becomes gradually and slightly wider towards the apex, which is slightly incised in the middle. Median segment thickly covered with depressed pale fulvous pubescence; reticulated; the central area large, reaching to the apex, becoming slightly narrowed to the end of the basal third, then more distinctly narrowed towards the apex; the keel surrounding the apical part is stout; the apex itself has a sharply oblique slope and is closely reticulated all over. Mesopleuræ strongly punctured and thickly covered with white hair. Metapleuræ strongly reticulated except at the base. Legs thickly covered with pale hair; the tarsal spines fulvous. Wings deep fuscous violaceous, the base hyaline; above the second cubital cellule is slightly longer than the third; both the cellules receive the recurrent nervures shortly behind the middle. Abdomen ferruginous; the petiole, except at the apex, and the apical two segments black; the ventral keel has a slight curve and projects slightly towards the apex; the middle segments are slightly punctured and fringed with fulvous hair; the last segment is strongly punctured except down the middle.

Mutilla cara, sp. n.

Long. 9 mm.

In Bingham's table (p. 9) this species comes into "*b*¹. Wings dark fulvous, with a purple effulgence," and "*d*². Second to fifth segments red," but is very different from anything there described. It differs from most of the species in the central area of the median segment being of equal width throughout.

Scape of antennæ thickly covered with long white hair, grooved beneath; the flagellum stout, thickly covered with a microscopic pile; the third and fourth joints subequal. The front and vertex punctured, thickly covered with silvery pubescence and more sparsely with long pale hair; the eye-incision deep. Clypeus shining, smooth, bare, triangular. Mandibles rufous in the middle, the base thickly covered with long hair. Pro- and mesonotum strongly punctured, thickly covered with long blackish hair; it has two longitudinal furrows, which are deeper and wider behind. Scutellum coarsely rugosely punctured; on the basal half in the centre is a smooth shining space, of equal width and slightly raised and projecting at the apex. Median segment reticulated, the reticulations longer on the basal half, which is, especially in the middle, thickly covered with pale fulvous down; its central area extends to the apex of the basal portion and is o

equal width throughout; the apex has an oblique slope and is covered with long pale hairs. Propleuræ shining, slightly hollowed; the lower part with four stout keels. Mesopleuræ strongly punctured in the middle, the base and apex smooth. Metapleuræ smooth, the apex strongly reticulated; the base on the lower side faintly and irregularly reticulated. Sternum smooth and shining. Legs black, thickly covered with white hair on the femora and tibiæ; the hair on the tarsi stiffer and more rufous in tint, especially on the lower side. Wings uniformly fuscous violaceous; the nervures and stigma black, the second cubital cellule at the top is slightly, at the bottom more distinctly, longer than the third; both the recurrent nervures are received near the base of the basal third of the cellules. Abdomen ferruginous; the petiole, except at the apex, and the last segment black; the petiole sparsely punctured, the sides covered with long pale hair; its ventral keel straight, only very slightly projecting at the base; the second to fifth segments ferruginous, their apices broadly covered with bright golden hair; the apex of the penultimate segment is black and covered also with golden hairs; the last segment is punctured, smooth down the middle, and covered with long white hairs.

Mutilla zodiaca, sp. n.

Nigra, abdomine rufo, apice nigro; capite thoraceque dense alboloposis; alis violaceis. ♂.

Long. 8 mm.

Antennæ stout, black; the scape covered with silvery hair, the flagellum with a pale pile. Head densely covered with longish silvery pubescence, which hides the sculpture on the front and vertex; the clypeus thickly covered with long silvery hair. Mandibles broadly rufous in the middle, the base thickly covered with silvery pubescence. Pronotum thickly covered with silvery pubescence; the pleuræ smooth except for a few indistinct striæ. Mesonotum coarsely punctured, shining, sparsely covered with longish black hairs; the two furrows are wide and deep. Scutellum rugosely punctured. The apical half of the median segment is thickly covered with depressed silvery pubescence, which completely hides the surface, which is reticulated; the apex has an oblique slope, is closely reticulated, and is covered with long white hair. Mesopleuræ punctured and thickly covered with silvery pubescence in the middle; the apex of the metapleuræ is reticulated; the base on the lower side is obscurely punctured. Mesosternum opaque, covered with

long pale hairs, its base with a row of punctures. Legs black; the four anterior trochanters rufous; the calcaria pale; the hair is long and dense. Wings fuscous violaceous; the stigma and nervures deep black; the second and third cubital cellules are equal in length at the top; below the second cellule is nearly twice the length of the third and receives the recurrent nervure in the middle; the second recurrent is received in the basal third. The petiole is sparsely covered with large punctures and with long pale hair; its basal teeth are large; the ventral keel is short, thick, and straight; the apical half of the segment is sharply oblique; the second to fifth segments are thickly fringed on the apex with long fulvous hair; the apical with paler fulvous hair; the pygidium is punctured throughout, the punctures stronger towards the apex, which is transverse. Ventral segments punctured, smooth at the base. The tegulæ bear large scattered punctures and have the edges behind rufous.

Allahabad.

Thynnidæ.

Methoca violaceipennis, sp. n.

Nigra, dense albo-hirsuta; alis violaceo-hyalinis, nervis stigmatibus nigris. ♂.

Long. 12 mm.

Antennæ black; the scape covered thickly with long fuscous hair; the flagellum densely with short stiff pubescence. Head black, the labrum fuscous, smooth. Clypeus roundly incised at the apex, which is oblique and ends in the middle above in a smooth tubercle-like projection; it is strongly aciculated. The front coarsely punctured; on its lower half in the middle is a wide furrow with oblique sides; the vertex is less strongly punctured. The face, cheeks, and outer orbits are thickly covered with long white, the front and vertex more sparsely with fuscous, hair. Thorax black, shining, thickly covered with white hair; the pronotum roundly, but not much, narrowed in front, distinctly but not very strongly punctured, except at the apex; the mesonotum similarly punctured; the sides near the base depressed and closely transversely striated; on the outer side of the depression is a longitudinal furrow which reaches to near the apex. Scutellum punctured like the mesonotum, its base transverse, obliquely depressed; the upper part of the depression smooth and separated from the lower, which is closely rugose. Median segment closely rugosely punctured; above the middle it is

transversely striated, the striæ running into reticulations which are stronger in the centre. Pro- and mesopleuræ closely punctured except at the apices; the metapleuræ rugosely punctured except at the base above; the basal furrow distinct, deep, and marked all over with short stout keels. Mesosternum closely punctured, except in the centre; the furrow is wide and deep and becomes wider and deeper towards the apex. Near the base the mesopleuræ are raised; the apex of the raised part curved above, and it is marked at irregular intervals with some stout keels. Legs black, covered with white hair, the calcaria rufous. Wings fusco-violaceous; the stigma and nervures black; the first transverse cubital nervure is oblique, faint above, completely obliterated below; the first recurrent nervure is received shortly beyond the middle, the second in the basal third. Abdomen shining, the basal segments slightly, the apical strongly punctured; the segments strongly constricted at the base, most strongly on the lower side; the constriction on the second segment finely striated.

As the fact is not alluded to by Col. Bingham, it may be pointed out that the males in this genus have hairy eyes. This makes the fourth Indian species.

Khasia Hills.

IV. — *The Larval Stage of Hypoderma bovis*. By P. KOOREVAAR, Veterinary Surgeon to the Amsterdam Public Abattoir *.

AT a meeting of the Nederlandsche Dierkundige Vereeniging held in October 1895 Dr. C. Ph. Sluiter exhibited certain *Æstrus*-larvæ which had been found by myself in the spinal canal of a young bullock.

Since then I have met with *Æstrus*-larvæ in the vertebral canal in the case of a large number of cattle from nine to eighteen months old and in certain full-grown animals up to the age of six years.

The larvæ lie freely in the fatty tissue between the dura mater spinalis and the periosteum, especially in the hindmost portion as far as the cauda equina.

In the fresh condition the larvæ are of a transparent white colour, with a light green interior. They are segmented and oblong in shape; the segmentations are more distinctly

* Translated by E. E. Austen from the 'Tijdschrift der Nederlandsche Dierkundige Vereeniging,' 2^{de} serie, deel v. (1898) pp. 29-34.